

REMARKS

This amendment is responsive to the Office Action dated November 28, 2003. Applicant has amended claims 1, 2, 9, 10, 14-19, 24-26, 30, 31 and 33 and canceled claims 27 and 34. Claims 1-26, 28-33 and 35-38 are now pending.

Overview of the claimed invention

Most of Applicant's claims are directed to an illumination device that includes a light emitting diode and one or more light guides positioned with respect to the light emitting diode for illumination of the light guides. Numerous other features are also recited in various independent and dependent claims, as discussed in greater detail below. In some cases, the invention is more narrowly directed to a sign that includes a light emitting diode, light guides positioned with respect to the light emitting diode for illumination of the light guides, and other features.

The light emitting diode, as recited in most claims, specifically requires emission of a radiation pattern, wherein a maximum luminous intensity of the radiation pattern is displaced relative to a center axis of the light emitting diode. This specific characteristic of the emission is a requirement of the light emitting diode, as claimed, and is not a functional limitation.

For example, not all light emitting diodes emit such a pattern. Some light emitting diodes emit radiation patterns having a maximum luminous intensity of the radiation pattern that is displaced, and some do not. Each of claims 1-33 require a light emitting diode that emits a radiation pattern having a maximum luminous intensity that is displaced relative to a center axis of the light emitting diode.

However, Applicant's claimed invention is not solely focused on the light emitting diode. Applicant does not dispute the fact that light emitting diodes that emit a displaced radiation pattern were known in the art at the time of Applicant's invention. Applicant's claimed invention exploits these specific light emitting diodes in a manner that, to Applicant's knowledge, is not disclosed or suggested in the prior art.

Specifically, Applicant's claimed invention recites light guides that are positioned with respect to the light emitting diode in a manner that exploits the recited characteristics of the light emitting diode. In particular, the claimed light guides are offset relative to the center axis of the

light emitting diode. Again, the exploitation of light emitting diodes that have angularly displaced radiation patterns, as recited in Applicant's claims, is not disclosed or suggested in the applied references.

In the interest of expediting prosecution toward issuance, Applicant has amended independent claims 1, 9, 14, 24, 26, 30 and 33 to more precisely define the positioning of the light guides with respect to the light emitting diode. In particular, Applicant has amended these claims to recite that each light guide is positioned such that a cross-sectional center of each light guide substantially corresponds to locations of the maximum luminous intensity of the radiation pattern of the light emitting diode.

None of the applied references discloses or suggests an illumination device that includes a light emitting diode having an angularly displaced radiation pattern and one or more light guides positioned such that a cross-sectional center of each light guide substantially corresponds to locations of the maximum luminous intensity of the radiation pattern of the light emitting diode. Moreover, none of the applied references recognize the advantage of such light guide placement, e.g., for exploitation of the angularly emission of the specific light emitting diodes, as claimed.

Overview of claim rejections under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 1-13, 24-29, and 33-38 under 35 U.S.C. 103(a) as being unpatentable over Naum (U.S. 6,272,269) in view of Petell et al. (U.S. 6,302,570) or Damsky et al. (U.S. 5,647,657). Applicant traverses these rejections. None of the Naum, Petell or Damsky references even discusses light emitting diodes having angularly displaced radiation patterns, as claimed. Accordingly, these references clearly lack any suggestion of the placement of light guides, as claimed, to exploit such radiation patterns.

In making the rejections based on the Naum, Petell or Damsky references, the Examiner stated that the phrase "wherein a maximum luminous intensity of the radiation pattern is displaced relative to a center axis of the light emitting diode" was not given patentable weight because it is in functional narrative form. Then, the Examiner stated that the phrase must be recited in means-plus-function format to be given patentable consideration.

Applicant respectfully disputes the Examiner's assessment that the phrase "wherein a maximum luminous intensity of the radiation pattern is displaced relative to a center axis of the light emitting diode" is functional or narrative. As outlined above, this phrase specifically limits the emission characteristics of the light emitting diode. Accordingly, the recited emission is a requirement of the light emitting diode, as claimed, and does not amount to a functional limitation that the Examiner can ignore.

The Examiner's later analysis in the Office Action even recognizes that the phrase "wherein a maximum luminous intensity of the radiation pattern is displaced relative to a center axis of the light emitting diode" is a limitation that structurally defines the output of the light emitting diode. For example, the Examiner cited McGaffigan (U.S. 6,337,946) as disclosing light emitting diodes that meet this structural limitation. As outlined below, however, the McGaffigan reference, like the other applied references, does not disclose or suggest the placement of light guides, as claimed, to exploit such radiation patterns.

In the Office Action, the Examiner also rejected claims 1-38 under 35 U.S.C. 103(a) as being unpatentable over Yoneda (U.S. 6,595,674) in view of McGaffigan (U.S. 6,337,946). Notwithstanding his earlier comments, however, the Examiner gave the proper patentable consideration to the phrase "wherein a maximum luminous intensity of the radiation pattern is displaced relative to a center axis of the light emitting diode" In this case, the Examiner cited McGaffigan (U.S. 6,337,946) as disclosing light emitting diodes that emit angularly displaced radiation patterns. The Examiner then stated that the Yoneda reference discloses light guides positioned at offset locations relative to a light emitting diode, and that it would have been obvious to use the light emitting diodes described in the McGaffigan reference which have angularly displaced radiation patterns in the Yoneda arrangement to arrive at Applicant's claimed invention.

Positioning light guides such that a cross-sectional center of each light guide substantially corresponds to locations of the maximum luminous intensity of the radiation pattern of the light emitting diode is not disclosed or suggested in any of the applied references.

In the interest of expediting prosecution toward issuance, Applicant has amended independent claims 1, 9, 14, 24, 26, 30 and 33 to more precisely define the positioning of the light guides with respect to the light emitting diode. In particular, Applicant has amended these claims to recite that each light guide is positioned such that a cross-sectional center of each light guide substantially corresponds to locations of the maximum luminous intensity of the radiation pattern of the light emitting diode.

None of the applied references discloses or suggests an illumination device that includes a light emitting diode having an angularly displaced radiation pattern and one or more light guides positioned such that a cross-sectional center of each light guide substantially corresponds to locations of the maximum luminous intensity of the radiation pattern of the light emitting diode. Moreover, none of the applied references recognize the advantage of such light guide placement for exploitation of the radiation output of light emitting diodes which emit angularly displaced radiation patterns.

Prior to this amendment, dependent claims 2, 10, 15, 25, 27, 31 and 34 formerly recited that the light guides are positioned such that a cross-sectional center of each light guide substantially corresponds to locations of the maximum luminous intensity of the radiation pattern of the light emitting diode. In rejecting dependent claims 2, 10, 15, 25, 27, 31 and 34, however, the Examiner identified nothing in the prior art that discloses or suggests this feature. Instead, the Examiner merely stated "in addition, the mentioned references disclose each light guide positioned such that a cross-sectional center of each light guide substantially corresponds to locations of the maximum luminous intensity of the radiation pattern of the light emitting diode."

As a matter of law, the Examiner's rejections of the previous dependent claims 2, 10, 15, 25, 27, 31 and 34 were clearly inappropriate insofar as the rejections lack a reasoned explanation of the Examiner's decision. Applicant has already reminded the Examiner that the Patent Office is required to present a full and reasoned explanation of its decision. In re Lee, 61 USPQ2d

1430, 1432 (Fed. Cir. 2002). This standard requires that the agency not only have reached a sound decision, but have articulated the reasons for that decision. Id. at 1433.

Once again, the Examiner did not provide a full and reasoned explanation for the rejection of claims 2, 10, 15, 25, 27, 31 and 34. In particular, a mere conclusion of obviousness without citing any passage of the applied references falls far short of meeting the Examiner's evidentiary burden. The Examiner's rejections do not give Applicant fair notice of the basis for the rejections, as required under the law.

Applicant can find nothing in any of the applied references which discloses or suggests an illumination device that includes a light emitting diode having an angularly displaced radiation pattern and one or more light guides positioned such that a cross-sectional center of each light guide substantially corresponds to locations of the maximum luminous intensity of the radiation pattern of the light emitting diode. Moreover, none of the applied references recognize the advantage of such light guide placement for exploitation of the radiation output of light emitting diodes which emit angularly displaced radiation patterns. Claims 1-33 should be allowed for at least these reasons.

Providing directional side lighting in two or more unique directions using two or more light guides illuminated by the same light emitting diode is not disclosed or suggested in any of the applied references.

In addition to the features addressed above, many of Applicant's dependent claims recite that each light guide provides directional side lighting in a unique direction. The Examiner did not identify anything in any of the applied references that discloses or suggests this feature. Instead, the Examiner merely stated "in addition, the mentioned references disclose [directional side lighting]." As explained above, such unsupported conclusions are legally insufficient to meet the Examiner's burden of proof with respect to patentability.

Moreover, Applicant is totally confused as to the Examiner's rejections of claim 35. Claim 35 does not require any particular light emitting diode or specific placement of the light guides with respect to the light emitting diode. Claim 35, however, does require that two different light guides be illuminated by a light emitting diode wherein each light guide provides

directional side lighting in a unique direction. In rejecting claim 35 the Examiner addressed features not included in claim 35 and did not address features which are included in claim 35.

Many other claimed features are also not disclosed or suggested in any of the applied references.

A large number of Applicant's pending claims recite a number of additional features which are not disclosed or suggested in any of the applied references. In almost every case, the Examiner rejected claims without identifying anything in the prior art that discloses or suggests the feature.

Instead, the Examiner states over and over "in addition, the mentioned references disclose [the respective feature]" The Examiner appears to have concocted a template sentence that he repeats to reject each claim without identifying anything from the prior art which would support the Examiner's conclusions. In particular, the Examiner's template for rejecting any claim without a proper legal analysis appears to be: "in addition, the mentioned references disclose [RESTATE APPLICANT'S CLAIM]"

For example, in the last Office Action, the Examiner rejected claims 2, 10, 25, 27, 3, 28, 4, 5, 6, 12, 7, 13, 8, 29, 36, 37 and 38 as being unpatentable over Naum in view of either Petell or Damsky. For each of these claims, the Examiner provided no rationale for the conclusion of obviousness, but merely recited his template sentence for rejection.

Also, in the Office Action, the Examiner rejected claims 2, 10, 25, 27, 3, 28, 4, 5, 6, 12, 7, 13, 8, 29, 36, 37, 38, 15, 16, 17, 18, 19, 20, 21, 22, 23, 31 and 32 as being unpatentable over Yoneda in view of McGaffigan. For each of these claims the Examiner again provided no rationale for the conclusion of obviousness, but merely recited his template sentence for each rejection without further explanation.

As one specific example, many of Applicant's dependent claims recite a light guide fixture formed to mate with the light guides, wherein the light guide fixture positions the light guides, as claimed. Although the Examiner indicates that such a fixture is disclosed in the prior art, he does not indicate where this feature is shown. Thus, Applicant is left guessing as to why the Examiner rejected the claim and what passage of the prior art the Examiner is relying on to

reject the claims. Applicant can find absolutely nothing in the Applied references which even remotely suggests a light guide fixture that positions the light guides at the offset locations relative to the center axis of the light emitting diode such that a cross-sectional center of each light guide substantially corresponds to locations of the maximum luminous intensity of the radiation pattern of the light emitting diode, as claimed.

The current Office Action is now the third Office Action. For the third time, the Examiner has resorted to hindsight-based contrivance in place of motivation in the prior art, and relied on vague, unsubstantiated statements of what the prior art shows. Pursuant to MPEP § 707.02, Applicant respectfully requests that the Supervisory Patent Examiner in charge of this application inspect the prosecution history, and review the applicable rejections in the interest of expediting prosecution.

From the course of prosecution so far, it is clear that the Examiner has applied neither effective prior art nor proper reasoning to support the various obviousness rejections under section 103. Instead, the grounds of rejection for almost every dependent claim are completely absent. The Examiner simply restates his template sentence over and over for each dependent claim without identifying any teaching in the prior art that would support his conclusion. Several independent claims were rejected in the same manner with little or no explanation given with respect to features recited in the claims.

Applicant has little choice but to once again expose the underlying legal and technical insufficiencies of the Examiner's analysis. At this time, however, Applicant requests supervisory review to address a troubling trend of ambiguity that has pervaded the Office Actions to date. In particular, Applicant takes issue with the Examiner's reliance on vague and unsubstantiated statements and rejections without any evidentiary support.

Conclusion

Applicant respectfully submits that all claims in this application are in condition for allowance. Applicant does not acquiesce to any of the Examiner's characterizations of the applied references with respect to the features recited in Applicant's claims, and reserve the right to address other features of the claims at a later date. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or

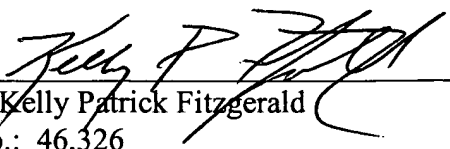
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credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

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Feb. 19, 2004
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